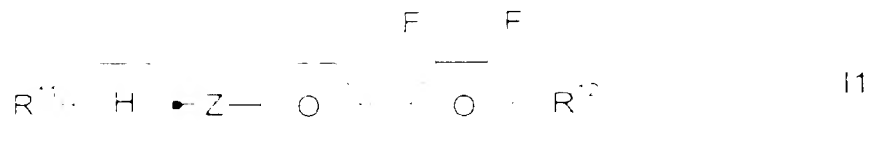
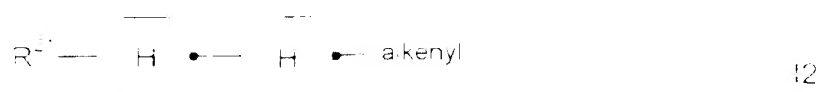


**Claims:**

1. A liquid crystal phase forming material consisting of a mixture of polar liquid crystal compounds, at least one of which is a compound of the formula



- in which Z is a ring and of formula II



in which

- R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently a hydrogen, alkyl or alkenyl radical of 1 to 10 carbon atoms which is unsubstituted, monosubstituted by fluorine, or disubstituted by fluorine and chlorine, or a phenyl ring substituted by 1 to 4 fluorine atoms, or a biphenyl group in which each phenyl ring is substituted by 1 to 4 fluorine atoms.

explained by



wherein the alkyl and alkenyl radicals are defined as follows: alkyl is a straight or branched chain of carbon atoms, each carbon atom being bonded to hydrogen atoms or fluorine atoms, and alkenyl is a straight or branched chain of carbon atoms, at least one of which is a double bond, and each carbon atom being bonded to hydrogen atoms or fluorine atoms.

wherein the phenyl ring is defined as



alkenyl is a straight-chain alkene having a double bond at the end.

- iii. The radical groups R<sup>1</sup> and R<sup>2</sup> are defined as follows: R<sup>1</sup> and R<sup>2</sup> comprising at least one ring and at least one alkyl.



II

- i. in which

p is independently as defined for P, R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup>.

ii. p is 1 or 2, and

n is 1 to 6.

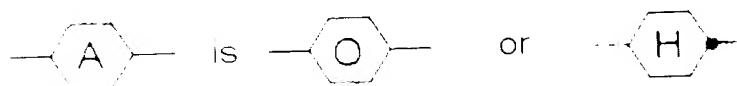
- iv. The radical groups R<sup>1</sup> and R<sup>2</sup> are defined as follows: R<sup>1</sup> and R<sup>2</sup> comprising at least one ring and at least one alkyl.



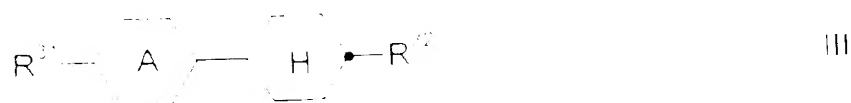
III

in which

R<sup>1</sup> and R<sup>2</sup> are each independently at the position of a straight-chain alkyl or alkoxy radical having a double bond at the end.

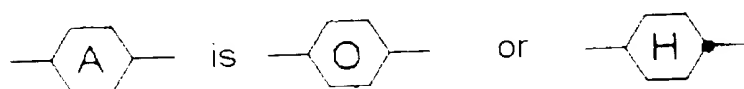


4. The medium according to claim 1, additionally comprising at least one compound of formula III

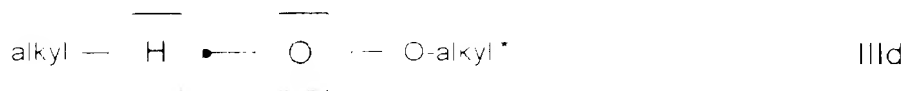
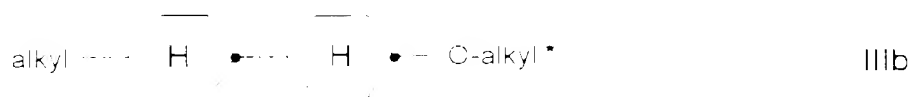
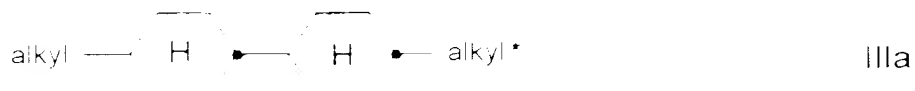


in which

A and H are each, independently of the other, a straight chain alkyl or alkoxy radical having 1 to 6 carbon atoms.

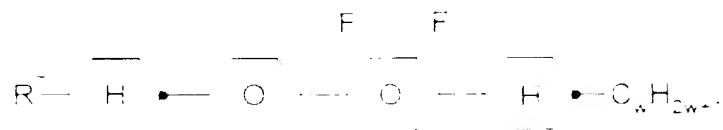


5. The medium according to claim 1, comprising at least three compounds of formulae II or III.
6. The medium according to claim 1, having a proportion of compounds of formula II in the total mixture of at least 1% by weight.
7. The medium according to claim 1, having a proportion of compounds of formula III in the total mixture of at least 1% by weight.
8. The medium according to claim 1, having a proportion of compounds of formula II in the total mixture of at least 1% by weight.
9. The medium according to claim 1, having a proportion of compounds of formula III in the total mixture of at least 1% by weight.
10. The medium according to claim 1, having a proportion of compounds of formula II and III in the total mixture of at least 1% by weight.



in which

- (a) alkyl and alkyl\* are both independently a straight chain alkyl having 10 carbon atoms;
- (b) the liquid crystalline phase according to claim I is composed at least one way out of formula IIIa, IIIb or IIIc and formula IIIc, and mixture thereof;
- (c) the liquid crystalline phase according to claim I additionally comprises at least one way out of the mixture



wherein

where  $P_1$  and  $P_2$  are positive integers,  $P_1 + P_2 = P$ , and  $P_1$  and  $P_2$  are relatively prime.

where  $P_1$  and  $P_2$  are positive integers,  $P_1 + P_2 = P$ , and  $P_1$  and  $P_2$  are relatively prime.

13. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

14. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

15. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

16.

17. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

18. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

19. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

20. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.

21. The liquid crystalline medium is a mixture of at least one liquid crystalline compound.